CC-580 & 80-Various Location
Program Code 201.015
04-2G440K
September 2011

Request Programming in 2012 SHOPP

PROJECT LOCATION:
In Contra Costa County, on Route 580 & 80 at PM various locations.

APPROVAL RECOMMENDED:

PATRICK PANG , PROJECT MANAGER

APPROVAL RECOMMENDED:

ROLAND AU-YEUNG , DISTRICT PROGRAM MANAGER

APPROVED:

BIJAN SARTIPI, DISTRICT DIRECTOR — *DATE* 9-27-11

This project initiation document has been prepared under the direction of the following Registered Civil Engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

PHILLIP COX, REGISTERED CIVIL ENGINEER — *DATE* 9/15/11

REGISTERED PROFESSIONAL ENGINEER
PHILLIP B. COX
No. C 46392
Exp. 3/31/2013
CIVIL
STATE OF CALIFORNIA

1. INITIATING OFFICE/INITIATOR:

The District 4 Program Manager for the Office of Traffic Safety Bridge Transition Railing Program has established that a project is needed that meets the qualification as a Collision Severity Reduction Project (201.015) for the State Highway Operation and Protection Program (SHOPP).

This small capital value project (SCVP) project initiation document (PID) provides conceptual approval of the proposal and a recommendation to program the project into the 2012 SHOPP. A project report will serve as final approval of the proposal.

2. PURPOSE AND NEED:

Purpose:

The purpose of the project is to improve the safety of motorists by reducing the potential and severity of run-off-road type accidents by upgrading existing nonstandard metal beam guard rail (MBGR) transition railing to meet the current Caltrans standard.

Need:

The current existing MBGRs connected to bridges, walls or concrete barriers do not meet the current standard. In order to improve safety, the bridge transition railing needs to be upgraded to meet current standards.

3. DEFICIENCY SUMMARY:

District 4 has identified locations in Contra Costa County where existing bridge transition railing does not meet the current Caltrans standard. The project proposed in this SCVP PID covers 61 locations where bridge transition railing will be replaced. These locations are listed in Attachment A- Project Description and Quantity Sheet.

4. PROJECT PROPOSAL:

This project will install standard Type W Beam (WB) at various locations. This includes MBGRs connected with bridge approach railing, concrete barriers, bridge abutments, retaining walls, and sound walls. The project will also replace some MBGR end treatments with the current standard. Details regarding these locations are included in Attachment A – Project Description and Quantity Sheet.
The capital cost estimate provided in this SCVP PID is included in Attachment B and is

intended for programming purposes only. It is recommended that the proposed improvements be programmed at the estimated capital construction cost and right of way cost of 2014/2015 fiscal year of $2,063,000.

Right of Way:
The proposed project will remove existing MBGR and install new WB or STB that meet Caltrans most recent standard. All construction work including traffic control operations will be performed within the State right of way.

Disposal Site:
As the amount of material to be disposed of is expected to be minimal the need for disposal site is not anticipated.

Utilities:
Since all of the proposed project work is on State highways or highway ramps, it is assumed that existing utilities will not need to be removed or relocated.

Environmental:
Environmental impacts associated with this bridge transition rail project are expected to be minimal and a Categorical Exemption is the anticipated environmental clearance for this project. The appropriate environmental clearance will be determined during the next project phase.

5. PROGRAMMING:

Project capital and support cost estimates, including key assumption used to prepare the estimates, are shown below:

PROJECT CAPITAL COST		
Fiscal Year	**Right of Way Capital**	**Construction Capital**
FY 2011/2012	5,000	$1,805,000
FY 2014/2015	5,000	$2,063,000
FY 2015/2016	5,000	$ 2,145,000

Key assumptions for the project cost estimate as percentage of total construction capital:

- TMP 1%
- SWDR 2%
- Contingency 30%

PROJECT SUPPORT COMPONENTS									
	PA&ED 0 Phase		Design 1 Phase		Right of Way 2 Phase		Construction 3 Phase		Total
	Dist	DES	Dist	DES	Dist	DES	Dist	DES	
Estimated PY's	1.80	0.60	1.51	0.30	0.06		1.51	0.24	6.02

Key assumption(s) for the cost estimate as percentage of total construction capital:

- Support cost 50%

6. SCHEDULE:

HQ Milestones	Delivery Date (Month, Day, Year)
PA & ED	7/2013
Regular Right of Way	11/2013
Project PS&E	5/2014
Right of Way Certification	5/2014
Ready to List	8/2014
Approve Contract	10/2014
Contract Acceptance	10/2015
End Project	12/2015

7. CONTACTS:

Roland Au-Yeung	Program Manager	(510) 286-4560
Patrick Pang	Project Manager	(510) 286-5584
William B. Wong	Project Engineer	(510) 286-4881

8. ATTACHMENTS:

A. Location Map
B. Project Description and Quantity Sheet
C. Preliminary Project Cost Estimate

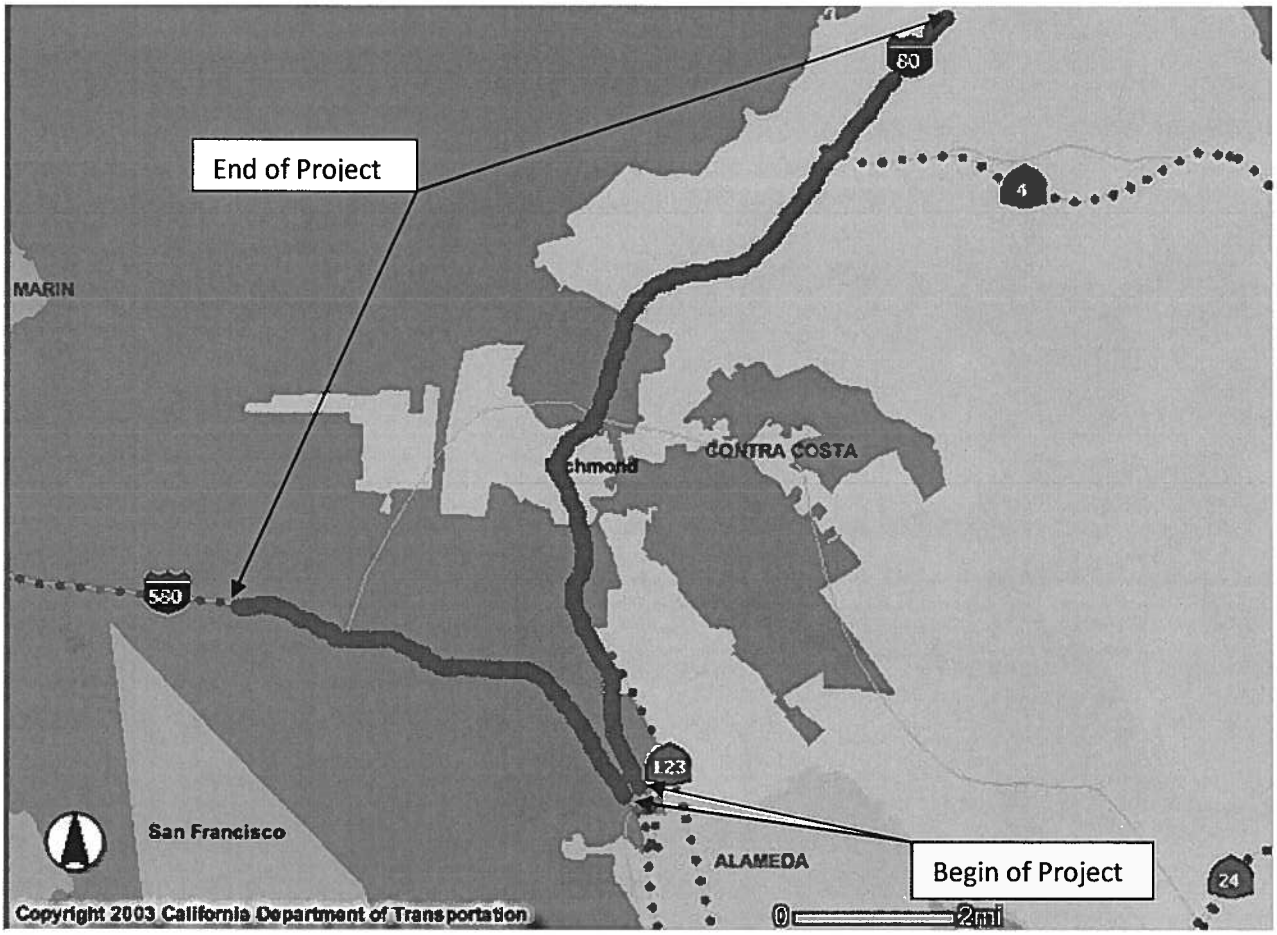
ATTACHMENT B - Cost Estimate for five highest cost items are listed below:

Traffic Control Systems	$213,800
Transportation Management Plan	$123,200
Minor Concrete (Minor Structure)- Anchor	$305,800
Transition Railing -Type WB	$219,600
Clearing & Grubbing	$109,800

Upgrade Type W beam (WB) Transition Railing

04-CC-580 & 80 at various locations
EA 04-2G440K
September, 2011

ATTACHMENT A – LOCATION MAP



ATTACHMENT B - PROJECT DESCRIPTION AND QUANTITY SHEET

Location							Description	Connecting Structure			Transition Railing Type		Minor Concrete (Minor Structure) For 10-ft Concrete Anchor Block (LF)	Vegetation Control (Minor Concrete) (SQYD)	MBGR (LF)		End Terminal (Each)	Existing Features/ Notes/ Remarks
ID #	County	Rte	PM	Direction	Highway (H) or Ramp (R)	Left side (L) or Right Side (R)		Concr. Barrier (Abutment)	Wall	Bridge Rail	WB	STB			Remove	Install		
1	CC	580	0.086	WB	R	R	WB OFF TO CENTRAL AVE	1			1		10	16.7	40.5	15.5	1	W/B OFF MBGR TO CONCRETE BARRIER AT RIGHT
2	CC	580	0.116	EB	R	R	EB ON FR CENTRAL AVE	1			1		10	16.7	40.5	15.5		E/B ON MBGR TO CONCRETE BARRIER AT RIGHT
3	CC	580	0.722	WB	H	R	RUST DRAIN 28-90	1			1		10	16.7	40.5	15.5	1	W/B MBGR TO CONCRETE BARRIER AT RIGHT
4	CC	580	0.722	EB	H	R	RUST DRAIN 28-90	1			1		10	16.7	40.5	15.5	1	E/B MBGR TO CONCRETE BARRIER AT RIGHT
5	CC	580	1.000	WB	R	R/L	WB OFF TO BAYVIEW AVE			2	2		20	33.3	81	56		W/B OFF MBGR TO BRIDGE RAIL AT RIGHT & LEFT
6	CC	580	1.000	EB	H	R	STEGE DRAIN 28-91	1			1		10	16.7	40.5	15.5		E/B MBGR TO CONCRETE BARRIER AT RIGHT
7	CC	580	1.174	WB	H	R	STEGE DRAIN 28-91	1			1		10	16.7	40.5	15.5		W/B MBGR TO CONCRETE BARRIER AT RIGHT
8	CC	580	1.174	EB	R	R/L	WB OFF TO BAYVIEW AVE			2	2		20	33.3	81	56		W/B OFF MBGR TO BRIDGE RAIL AT RIGHT & LEFT
9	CC	580	4.671	WB	H	L	5 RICH/SRF BR 28-100			1	1		10	16.7	40.5	15.5		W/B MBGR TO BRIDGE RAIL AT LEFT
10	CC	580	4.765	EB	H	R	END BR 28-277			1	1		10	16.7	40.5	15.5		E/B MBGR TO BRIDGE RAIL AT RIGHT
11	CC	580	4.776	WB	R	R	WB OFF TO CASTRO ST			1	1		10	16.7	40.5	15.5		W/B OFF MBGR TO BRIDGE RAIL AT RIGHT
12	CC	580	4.812	WB	R	R/L	SEG WB OFF TO CASTRO ST			2	2		20	33.3	81	56		W/ OFF MBGR TO BRIDGE RAIL AT RIGHT & LEFT
13	CC	580	5.111	EB	R	R/L	SEG EB ON FR CASTRO ST	2			2		20	33.3	81	56		E/B ON MBGR TO CONCRETE BARRIER AT LEFT & RIGHT
14	CC	580	5.128	WB	H	R	RAILROAD AVE OH28-56R/L	1			1		10	16.7	40.5	15.5		W/B MBGR TO CONCRETE BARRIER AT RIGHT
15	CC	580	5.295	WB	H	R	CASTRO ST UC 28-290 R/L			1	1		10	16.7	40.5	15.5		W/B MBGR TO BRIDGE RAIL AT RIGHT
16	CC	580	5.300	WB	R	R/L	WB ON FR CASTRO ST	2			2		20	33.3	81	56		W/B ON MBGR TO CONCRETE BARRIER AT LEFT & RIGHT
17	CC	580	5.428	EB	R	R	STANDARD AVE ON RAMP	1			1		10	16.7	40.5	15.5		E/B MBGR TO CONCRETE BARRIER
18	CC	580	5.655	WB	H	R	CHEVRON WAY UC		1		1		10	16.7	40.5	15.5		W/B TO CONCRETER BARRIER/SOUND WALL
19	CC	580	5.970	EB	H	R	MARINE ST UC 28-139	1			1		10	16.7	40.5	15.5	1	E/B MBGR TO CONCRETE BARRIER
20	CC	580	6.221	WB	H	R	Mainline R5.655	1			1		10	16.7	40.5	15.5		W/B CORTEN MBGR TO CONCRETE BARRIER
21	CC	80	0.137	WB	R	R	EB OFF TO CENTRAL AVE	1			1		10	16.7	40.5	15.5	1	FACING MAINLINE
22	CC	80	0.101	EB	R	R	WB ON FROM CENTRAL AVE	1			1		10	16.7	40.5	15.5		WB ON MBGR TO CONC BARRIER
23	CC	80	0.216	WB	H	R	CENTRAL AVE UC 28-114			1	1		10	16.7	40.5	15.5		WB MBGR TO BRIDGE RAILING
24	CC	80	1.000	EB	H	R	CARLSON BLVD UC 28-123	1			1		10	16.7	40.5	15.5		EB MBGR TO CONC BARRIER
25	CC	80	1.025	WB	H	R	000.646 END BR 28-123			1	1		10	16.7	40.5	15.5		WB MBGR TO CONC BARRIER/BRIDGE RAIL
26	CC	80	1.671	EB	H	R	POTRERO AVE UC 28-34	1			1		10	16.7	40.5	15.5		EB MBGR TO CONC BARRIER
27	CC	80	1.993	EB	R	R	CUTTING BV			1	1		10	16.7	40.5	15.5		EB MBGR TO CONC BARRIER/BRIDGE RAIL
28	CC	80	2.040	WB	H	R	CUTTING BLVD UC 28-80L		1		1		10	16.7	40.5	15.5		WB MBGR TO CONC BARRIER/SOUND WALL
29	CC	80	2.558	EB	R	L	EB OFF TO WB MCDONALD	1			1		10	16.7	40.5	15.5		E/B OFF MBGR TO CONC BARRIER
30	CC	80	2.716	WB	R	R	WB ON FROM BARRETT AVE.			1	1		10	16.7	40.5	15.5		WB ON MBGR TO BRIDGE RAIL

ATTACHMENT B - PROJECT DESCRIPTION AND QUANTITY SHEET

Location							Description	Connecting Structure			Transition Railing Type		Minor Concrete (Minor Structure) For 10-ft Concrete Anchor Block (LF)	Vegetation Control (Minor Concrete) (SQYD)	MBGR (LF)		End Terminal (Each)	Existing Features/ Notes/ Remarks
ID #	County	Rte	PM	Direction	Highway (H) or Ramp (R)	Left side (L) or Right Side (R)		Concr. Barrier (Abutment)	Wall	Bridge Rail	WB	STB			Remove	Install		
31	CC	80	2.752	EB	R	R	EB OFF TO SAN PABLO AVE.	1			1		10	16.7	40.5	15.5		E/B OFF MBGR TO CONC BARRIER
32	CC	80	2.822	EB	H	R	BARRETT AVE UC 28 83	1			1		10	16.7	40.5	15.5		EB MBGR TO CONC BARRIER
33	CC	80	2.853	WB	H	R	END BR 28-83			1	1		10	16.7	40.5	15.5		WB MBGR TO BRIDGE RAILING
34	CC	80	2.961	EB	H	R	SAN PABLO AVE UC 28-84	1			1		10	16.7	40.5	15.5		EB MBGR TO CONC BARRIER
35	CC	80	2.989	WB	H	R	SAN PABLO AVE UC			1	1		10	16.7	40.5	15.5		WB MBGR TO BRIDGE RAILING
36	CC	80	3.154	WB	R	R/L	WB OFF TO S.PABLO-BRRTT			2	2		20	33.3	81	56		WB OFF MBGR TO BRIDGE RAILING, RIGHT AND LEFT
37	CC	80	4.583	EB	R	L	EB ON FR SAN PABLO DAM	1			1		10	16.7	40.5	15.5		EB ON MBGR TO CONC BARRIER
38	CC	80	4.747	WB	R	R	WB ON FR EL PORTAL DR	1			1		10	16.7	40.5	15.5		WB MBGR TO CONC BARRIER
39	CC	80	5.246	EB	H	R	EL PORTAL DR UC 28-122	1			1		10	16.7	40.5	15.5		EB MBGR TO CONC BARRIER
40	CC	80	5.268	WB	H	R	EL PORTAL DR UC 28-122	1			1		10	16.7	40.5	15.5		WB MBGR TO BRIDGE RAILING
41	CC	80	5.363	EB		R	EB ON FR EL PORTAL DR	1			1		10	16.7	40.5	15.5		EB MBGR TO CONC BARRIER
42	CC	80	5.442	EB	R	R	EB ON FR EL PORTAL DR		1		1		10	16.7	40.5	15.5		EB ON MBGR TO CONC BARRIER/ RETAINING WALL
43	CC	80	6.744	WB	H	R	RICHMOND PKWY OC 28-308			1	1		10	16.7	40.5	15.5		WB MBGR TO BRIDGE STRUCTURE
44	CC	80	6.856	WB	H	R	WB OFF TO RICHMOND PKWY	1			1		10	16.7	40.5	15.5		WB OFF MBGR TO CONC BARRIER
45	CC	80	7.597	EB	H	R	APPIAN WAY OC 28-146		1		1		10	16.7	40.5	15.5		EB MBGR TO CONC RETAINING WALL
46	CC	80	7.733	EB	R	R	EB ON FR NB APPIAN WAY		1		1		10	16.7	40.5	15.5		EB ON MBGR TO CONC RETAINING WALL
47	CC	80	7.780	WB	R	R	WB OFF TO APPIAN WAY		1		1		10	16.7	40.5	15.5		WB OFF MBGR TO CONC BARRIER/SOUND WALL
48	CC	80	8.397	EB	R	R	CC PIN 008.397 DR WB ON FR PINOLE VLY RD	1			1		10	16.7	40.5	15.5		EB ON MBGR TO CONC BARRIER
49	CC	80	8.508	EB	H	R	PINOLE VAL UC 28-121			1	1		10	16.7	40.5	15.5		EB MBGR TO CONC BARRIER/BRIDGE RAIL
50	CC	80	8.524	WB	H	R	PINOLE VAL UC 28-121			1	1		10	16.7	40.5	15.5		WB MBGR TO CONC BARRIER/BRIDGE RAIL
51	CC	80	9.573	WB	R	R	WB ON FR RTE 4			1	1		10	16.7	40.5	15.5		WB MBGR TO CONC BARRIER/BRIDGE RAIL
52	CC	80	9.712	EB	H	R	SYCAMORE AVE OH 28 143			1	1		10	16.7	40.5	15.5		EB MBGR TO CONC BARRIER/BRIDGE RAIL
53	CC	80	10.046	EB	H	R	ROUTE 4 BRIDGE			1	1		10	16.7	40.5	15.5		EB MBGR TO CONC BARRIER/BRIDGE RAIL
52	CC	80	13.476	WB	R	R/L	WB ON FR CROCKETT			2	2		20	33.3	81	56		WB ON MBGR TO BRIDGE RAIL, LEFT AND RIGHT
SUM								29	6	26	61	0	610	1017	2471	1121	5	

Total **63** locations.

ATTACHMENT C - *PRELIMINARY PROJECT COST ESTIMATE*

District-County-Route:	04-CC-580 & 80
PM:	Various
EA:	2G440K
Project ID:	0400020807
Program Code:	SHOPP 201.015

PROJECT DESCRIPTION:

Project Limits:
In Contra Costa County at various locations on Route 580 and 80.

Proposed Improvement (Scope):
To install Type W Beam (WB) or Single Thrie Beam (STB) transition railing at existing metal beam guard railing (MBGR) that is connected to bridge approach railing or concrete barrier at various locations on Instate State Routes 580 and 80 in Contra Costa County.

Alternative:
Build Alternative

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	$ 1,800,000
TOTAL STRUCTURE ITEMS	$ -
SUBTOTAL CONSTRUCTION COSTS	$ 1,800,000
TOTAL RIGHT OF WAY ITEMS	$ 5,000
TOTAL PROJECT CAPITAL OUTLAY COSTS	**$ 1,805,000**

Reviewed by District Program Manager _____ (Signature)

Approved by Project Manager _____ (Signature) 9/15/11 Date

Phone No. _____

District-County-Route:	04-CC-580 & 80
PM:	Various
EA:	2G440K
Project ID:	0400020807
Program Code:	SHOPP 201.015

I. ROADWAY ITEMS

Section 1 Earthwork

	Quantity	Unit	Unit Price	Section Cost Item Cost
Roadway Excavation				
Imported Borrow				
Clearing & Grubbing	1	LS	$ 40,000	$ 40,000
Develop Water Supply				
Top Soil Reapplication				
Stepped Slopes and Slope Rounding (Contour				
Remove Concrete				

Subtotal Earthwork: $ 40,000

Section 2 Pavement Structural Section

	Quantity	Unit	Unit Price	Section Cost Item Cost
PCC Pavement (___Depth)				
PCC Pavement (___Depth)				
Hot Mix Ashpalt (Type A)				
Lean Concrete Base				
Cement-Treated Base				
Aggregate Base (Class 3)				
Treated Permeable Base				
Aggregate Sub base				
Pavement Reinforcing Fabric				
Minor Concrete (Minor Construction)				
Edge Drains				

Subtotal Pavement Structural Section: 0

Section 3 Drainage

	Quantity	Unit	Unit Price	Section Cost Item Cost
Large Drainage Facilities				
Storm Drains				
Pumping Plants				
Project Drainage(X-Drains, overside, etc.)				

Subtotal Drainage: _____

Section 4: Specialty Items

	Quantity	Unit	Unit Price	Section Cost Item Cost
Retaining Walls				
Noise Barriers				
Barriers and Guardrails				
Aerially Deposit Lead Soil	85	CY	$ 250	$ 21,181
Water Pollution Control	1	LS	$ 20,898	$ 20,898
Hazardous Waste Investigation and/or Mitigation	1	LS	$ 10,449	$ 10,449
Temporary K-Rail				$ -
Temporary Crash Cushion				$ -
Environmental Compliance	1	LS	$ 10,449	$ 10,449
Resident Engineer Office Space				

Subtotal Specialty Items: 62,977

Section 5: Traffic Items

	Quantity	Unit	Unit Price	Item Cost
Lighting				
Traffic Delineation Items				
Traffic Signals				
Overhead Sign Structures				
Roadside Signs				
Traffic Control Systems	1	LS	$213,750	$ 213,750
Transportation Management Plan	1	LS	$123,200	$ 123,200
Temporary Detection System Staging				
Thermoplastic Traffic Stripe				$ -
Remove Channelizer				$ -
Remove Traffic Stripe				$ -
Remove Pavement Marker				

Subtotal Traffic Items: $ 336,950

Section 6 Planting and Irrigation

	Quantity	Unit	Unit Price	Section Cost Item Cost
Highway Planting				
Replacement Planting				
Irrigation Modification				
Relocate Existing Irrigation Facilities				
Irrigation Crossovers				

Subtotal Planting and Irrigation Section: $ -

Section 7: Roadside Management and Safety Section

	Quantity	Unit	Unit Price	Section Cost Item Cost
Vegetation Control-Minor Concrete	1017	SQYD	$ 62	$ 63,054
Minor Concrete (Minor Structure) -Anchor	610	LF	$ 500	$ 305,000
Remove existing MBGR	2471	LF	$ 6	$ 14,826
Metal Beam Guard Rail-Wood Post	1121	LF	$ 26	$ 29,146
Alternative Flared Terminal System	5	EA	$ 2,500	$ 12,500
Transition Railing -Type WB	61	EA	$ 3,600	$ 219,600
Transition Railing -Type STB				
Single Thrie Beam Barrier				
Gore Area Pavement				
Pavement beyond the gore area				
Miscellaneous Paving				
Erosion Control	4.0	CY	665	$ 2,660
Slope Protection				
Side Slopes/Embankment Slopes				
Relocating roadside facilities/features				

Subtotal Roadside Management and Safety Section: $ 646,786

Subtotal Sections: (1 thru 7) $ 1,086,713

Section 8: Minor Items

$1,086,713 (Subtotal Sections 1 thru 7)	X	10%	=	$ 108,671

TOTAL MINOR ITEMS: $ 108,671

Section 9: Roadway Mobilization

$1,195,385 (Subtotal Sections 1 thru 8)	X	10%	=	$ 119,538

TOTAL ROADWAY MOBILIZATION: 119,538

Section 10 Roadway Additions

Supplemental Work

$1,195,385 (Subtotal Sections 1 thru 8)	X	10%	=	$ 119,538

Contingencies	1,195,385 (Subtotal Sections 1 thru 8)	X	30%	$ 358,615

TOTAL ROADWAY ADDITIONS: 478,154

TOTAL ROADWAY ITEMS $ 1,793,077
(Subtotal Sections 1 thru 10)

USE $ 1,800,000

Prepared By:	William B. Wong (Print Name)	Phone #	(510) 286-4881	Date	9/12/2011
Checked By:	Phillip Cox (Print Name)	Phone #	(510) 286-5584	Date	9/15/2011

District-County-Route: 04-CC-580 & 80
PM: Various
EA: 2G440K
Project ID: 0400020807
Program Code: SHOPP 201.015

II. STRUCTURES ITEMS

	Structure (1)	Structure (2)	Structure (3)
Bridge Name			
Structure Type			
Width (out to out) - (ft)			
Span Lengths - (ft)			
Total Area - (ft2)			
Footing Type (pile/spread)			
Cost Per ft2 (incl. 10% mobilization and 25% contingency)			
Total Cost for Structure			

SUBTOTAL STRUCTURES ITEMS (Sum of Total Cost for Structures)

Railroad Related Costs:

SUBTOTAL RAILROAD ITEMS 0

TOTAL STRUCTURES ITEMS 0
(Sum of Structures Items plus Railroad Items)

COMMENTS:

Prepared By:	William B. Wong (Print Name)	Phone #	(510) 286-4881	Date	9/12/2011
Checked By:	Phillip Cox (Print Name)	Phone #	(510) 286-5584	Date	9/15/2011

NOTE: If appropriate, attach additional pages and backup.

District-County-Route: 04-CC-580 & 80
PM: Various
EA: 2G440K
Project ID: 0400020807
Program Code: SHOPP 201.015

III. RIGHT OF WAY ITEMS — ESCALATED VALUE

A. Acquisition, including excess lands, damages to remainder(s) and Goodwill
Project Permit Fees
Grantor's Appraisal Cost
B. Utility Relocation (State share: $5000) (Escalated Value to 6/13) 5,000
C. Relocation Assistance
D. Clearance/Demolition
E. Title and Escrow Fees

TOTAL RIGHT OF WAY ITEMS: 5,000
(Escalated Value)

Anticipated Date of Right of Way Certification
(Date to which Values are Escalated)

F. Construction Contract Work
Brief Description of Work:

Right of Way Branch Cost Estimate for Work * $ 0

* This dollar amount is to be included in the Roadway and/or Structures Items of Work, as appropriate. Do not include in Right of Way Items.

COMMENTS:

Prepared By: William B. Wong (Print Name) Phone # (510) 286-4881 Date 9/12/2011

Checked By: Phillip Cox (Print Name) Phone # (510) 286-5584 Date 9/15/2011

NOTE: If appropriate, attach additional pages and backup.